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Classification of Lands in Western
Canada



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Bulletin No. 49

Classification of Lands in Western Canada



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DEPARTMENT OF THE INTERIOR

TOPOGRAPHICAL SURVEY

F. H. PETERS, Director

Bulletin No. 49

Classification *of* Lands
in
Western Canada




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Classification of Lands in Western Canada

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OBJECTS AND PURPOSES

Land classification is a systematic survey or examination of the land in order to obtain complete and authentic information concerning the surface, the surface covering, the nature of the soil, and the extent of surface improvements.

This work has been carried on in Western Canada since 1918, the chief purpose being to assist settlement by placing before the intending settler information that will help him to choose a desirable farm, and to assist development by ascertaining more definitely the resources of the country.

Approximately twenty-seven million acres have been classified along the northern edge of the settled parts of Manitoba, Saskatchewan and Alberta, a tabulated list of which is given in the "Schedule of Lands Classified" on page 15 of this pamphlet.

After the examination and classification of the lands of a district, maps and reports are published and are made available to the public. These include the township development plans, the land classification map, the soil map, and the township reports. In order to obtain the most complete information concerning any particular tract of country these maps and reports should be used conjointly.

TOWNSHIP DEVELOPMENT PLAN

The township development plan, formerly known as the township topographic map, covers in each case the tract of country included in one township, regularly six miles square. It is published on a scale of forty chains to one inch, although the most recent are being issued on a scale of sixty chains to one inch.

Since the quarter-section is the most important farm unit in Western Canada, particular attention is given towards mapping all physical features affecting the value of that unit. The surface is one of these important features and as a consequence a general description

for each quarter-section is given ranging through the various types including level, nearly level, gently sloping, undulating, gently rolling, rolling, rolling slope, heavy rolling, hilly, valley hillside, etc.

Another feature of importance affecting the value of a quarter-section is the surface covering. There are a great many different types in Western Canada, the commonest of which is prairie, a treeless tract of country generally covered with a thick growth of natural grasses. Many combinations of prairie and bush land occur. Prairie can be easily brought under cultivation but bush land must first be cleared.

Thus, the amount and type of clearing that has to be done on each farm unit is a matter of great importance. Because of this, much attention is given to presenting this information on the township development plan. Where the land is nearly all covered with bush, the kind of timber, size, and density are indicated. To further qualify this, the type of clearing, whether light, medium, or heavy, is shown in different colours. Areas on which the clearing is considered to be light are in light green, areas of medium clearing are in a medium shade of green, and those of heavy clearing are in a dark shade of green. Prairie or nearly prairie lands are in a light buff colour.

The plan shows other important features: hay meadows, by a standard distinguishing symbol; rivers,

lakes, and large sloughs, in blue colour; and swamps, marshes, and muskegs, in a purplish gray colour. The larger areas of low land liable to flooding are so designated as such and outlined by broken lines, while streams, important watercourses, and the larger coulées and ravines are also clearly mapped.

When the township is in a partly settled district all important improvements and developments are noted, such as, railroads, towns, villages, bridges, ferries, telephone lines, and drainage ditches. Cultivated lands are in a dark buff colour, post offices are prominently marked, farm buildings are shown in each case by a small black square, schools by a small square with flag symbol, and churches by a small square with cross.

Roads are classified into four classes, which are distinguished by different symbols. First-class roads include through roads, generally interprovincial highways. Second-class roads are main market roads or those connecting important settlements. The third-class are local roads well travelled, and the fourth-class include local roads slightly travelled and generally in poor condition.

The township development plan gives also the main types of soil within its limits. These are marked at frequent intervals or are outlined on a small inset plan in one corner of the map. The classification of soils

and a general description of soil mapping are more definitely outlined hereafter under the heading of "Soil Map."

LAND CLASSIFICATION MAP

Land classification maps are issued on scales of three miles or four miles to the inch, that is, one inch on the map represents respectively three miles or four miles on the ground. The territory covered by each embraces from twenty-five townships upwards.

On these maps the quarter-section is taken as the unit. Each is classified, according to its agricultural possibilities, while the examiner is on the ground collecting information concerning surface, soil, bush covering, and other features given on the township development plan described above:

The classification scheme as used depends somewhat upon the conditions of the district classified. The classes generally used when the country is mostly wooded and not too well settled are briefly outlined below.

Quarter-sections are divided into arable and non-arable lands. Arable lands are again divided into two classes; these are respectively:

Lands having good soil and suitable surface, and which upon development will compare favourably

with the average first-class farm of the district; and lands in which owing to some defect in soil or surface, the farm unit is not fully equal to the average first class farm of the district. These are each in turn divided into three sub-classes, viz.:—

- (a) Lands with a considerable portion open and ready for breaking.
- (b) Lands lightly timbered and requiring clearing to prepare them for breaking.
- (c) Lands covered with heavy bush, mostly poplar.

Non-arable lands are also divided into two classes. These are respectively: Lands which under ordinary conditions are not suitable for cropping, but which are of value for stock-raising purposes when adjoining settled lands; and lands in their present condition not suitable for agricultural purposes.

Under the former there are two sub-classes, viz.:—

- (a) Quarter-sections containing low-lying land on which a considerable quantity of wild hay can be harvested in an average season.
- (b) Rough or hilly lands, or lands with inferior soil, generally partially open, and with sufficient growth of grass to provide summer pasture.

Lands in their present condition not suitable for agricultural purposes include hilly bush lands, or lands cut up by extensive wet swamps, bogs or marshes, or lands with stony, gravelly, or very sandy soil.

In districts where there is considerable prairie the above classification is somewhat modified to include a greater number of sub-classes under the heading of arable lands.

The various sub-classes of lands are set forth in colours on the land classification map and, in the accompanying legend, descriptions are given of the lands represented by each colour. For example, a bright red colour is used to denote the first sub-class under arable lands, that is, lands having good soil and suitable surface, etc., and with a considerable portion open and ready for breaking. By looking for this red colour on the map, the choice quarter-sections can be picked out at a glance. Similarly, other sub-classes are distinguished by their representative colours.

It will thus be seen that this map affords a bird's-eye view of the district examined with regard to its agricultural possibilities.

It shows the chief topographical features, such as lakes, rivers and streams, large hay meadows and marsh lands, and extensive swamps. It also shows the artificial features, such as dwellings, schools, churches, post offices, roads, railways, towns and villages, elevators, telephone lines and ferries, and others relating to the development of the country, where such development has taken place; all of which have an important bearing on agricultural values.

SOIL MAP

The chief object of the soil map is to give a general idea of the soil for all practical purposes. In this connection the main types of soil, only, are mapped. There may be small pockets within the main types, but the boundaries of these are not determined. Fire-swept areas, when of considerable extent and partially or wholly denuded of organic matter are carefully noted.

In the field survey, at frequent intervals the colour, texture, depth of surface soil and the nature of the subsoil are obtained.

Representative samples are taken of the different soil strata to a depth of three feet and sent to the Departmental Soils Laboratory for analysis. In the analysis of these samples the main factors determined are: class name of soil, alkalinity or acidity of soil, organic matter content, and nitrogen content.

The class names are coarse sand, medium sand, fine sand, very fine sand, sandy loam, fine sandy loam, sandy clay, loam, silt loam, clay loam, silty clay loam, and clay. These class names are determined by the percentages of gravel, sand, silt, and clay present in a sample.

As in the case of the land classification map previously described, the soil map is printed on a scale of three miles or four miles to an inch. The main soil

types are represented by colours, there being as many colours as there are types. Sandy areas are in solid yellow, clay loam areas in solid blue, fine sandy loam in pink, etc. A glance at the map will be sufficient to show where the sand areas are when the colour that represents sand is known. The same applies to each of the other types of soil.

Cross hatchings of various kinds are used on some maps to represent the nature of the surface. If the surface is hilly it is represented in one way, if rolling it is represented in another way, etc. For a proper interpretation the legend should be carefully consulted. Other topographical features such as roads, telephone lines, etc., are similar to those shown on the land classification maps.

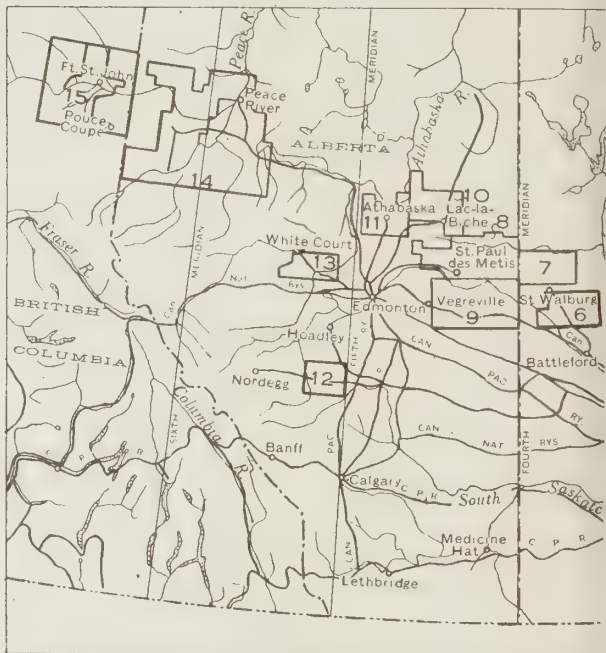
TOWNSHIP REPORT

A full report is prepared on each township classified dealing with matters of interest, such as, accessibility, water, crops and stock, progress of settlement, marketing points, schools, post offices, nearest towns, elevators, fuel, winter feed for stock, and other features affecting the agricultural value of the land within the township.

USES OF THE MAPS AND REPORTS

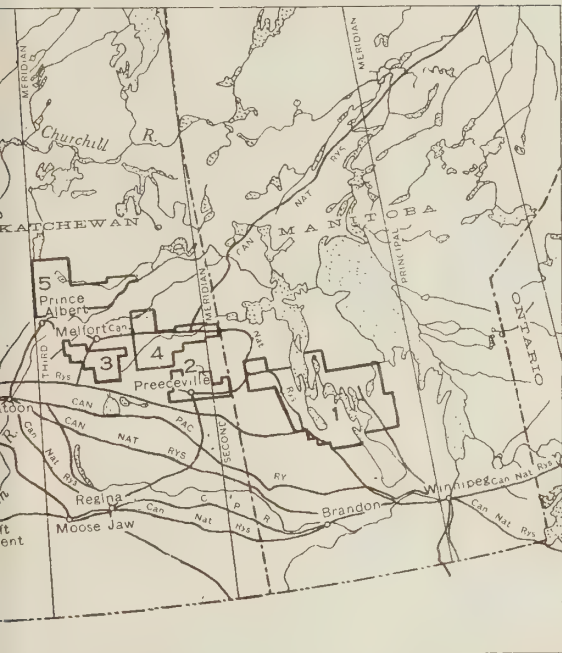
Let it be supposed that a reader of this pamphlet is looking for a quarter-section of farm land.

INDEX TO DISTRICTS COVERED



Note - This index shows districts covered by township development plans, and these, together with information regarding maps and plans published, are

LAND CLASSIFICATION MAPS



classification maps, and soil maps up to January 1, 1926. Descriptions of
 en under "Schedule of Lands Classified" on page 15 of this pamphlet.

When he has decided in which locality he desires to settle, he may, where land classification surveys have been carried on, obtain from the Head Office at Ottawa of the Topographical Survey, Department of the Interior, or consult at the nearest land office for the district, the land classification and other maps enumerated above. From the land classification map he can note a few of the better available quarter-sections with their locations and the means of access thereto. From the soil map he can obtain a good idea of the soil. From the township development plan he can obtain detailed information regarding surface, surface covering, and the development that has taken place in the neighbourhood.

In the general development of a district these maps also have a very useful place. Presenting as they do what is in effect a picture of the country as it is and showing the land resources, the settlement and development that has already taken place, and indicating the desirability for settlement of unoccupied lands, they form an admirable base upon which may be planned out upon proper lines future growth and development.

In the same way the information on these maps will prove valuable to colonization agents, to farm realty companies, to municipal officials and assessors, to railway companies, to elevator companies, and on account of their statistical value will prove useful to bankers, merchants, lawyers, operators of creameries

and cheese factories, and also to the travelling public who will find them useful, as the roads and towns, streams, etc., are shown. Thus, in general it may be said they are of value to those classes of people whose interests are in any way connected with the products of agriculture or with the settlement of lands.

SCHEDULE OF LANDS CLASSIFIED

The schedule below gives the districts covered by land classification since this work was begun in 1918 with, in each case, the plans and maps—township development plans, land classification maps, and soil maps—that have been published up to January 1, 1926. Numbers given to the districts correspond to numbers on index map pages 10 and 11.

1. Lakes Winnipegosis and Manitoba, Province of Manitoba.

Tps. 26 to 30, range 6; tps. 25 to 33, range 7; tps. 26 to 33, range 8; tps. 25 to 34, range 9; tps. 23 to 33, ranges 10 to 14; tps. 23 to 38, ranges 15 and 16; tps. 23 to 25 and tps. 27 to 35, range 17; tps. 25 to 33, range 18; tps. 25 to 34, range 19; tps. 27 to 35, range 20; tps. 29 to 36, range 21; tps. 30 to 37, range 22; tps. 34 to 37, range 23; tps. 36 to 39, ranges 24 to 26; and tps. 36 to 38, range 27, all west of the Principal meridian.

Township development plans and land classification map published. Soil map published for part of district.

2. North and East of Preeceville,
Province of Saskatchewan.

Tps. 34 to 36, range 30; tps. 34 and 35, range 31; tps. 34 to 36, range 32; and tp. 34, range 33; all west of the Principal meridian. Tps. 34 to 37, ranges 1 to 4; tps. 34 to 38, range 5; tps. 34 to 37, range 6; and tps. 34 and 35, range 7, all west of the Second meridian.

Township development plans, land classification map, and soil map published.

3. South of Melfort,
Province of Saskatchewan.

Tp. 42, range 14; tps. 38 to 42, ranges 15 to 17; tps. 39 to 42, range 18; tps. 40 to 42, range 19; tps. 41 and 42, range 20; tps. 42 and 43, ranges 21 and 22; and tps. 43 and 44, range 23, all west of the Second meridian.

Township development plans, land classification map, and soil map published.

4. Pasquia and Porcupine,
Province of Saskatchewan.

Tps. 44 and 45, ranges 30 to 32, west of the Principal meridian; tps. 44 to 46, range 1; tps. 43 to 46; ranges 2 to 5; tps. 42 to 45, ranges 6 and 7; tps. 40 to 45, ranges 8 and 9; tps. 40 to 48, range 10; tps. 40 to 49, range 11; and tps. 41 to 49, range 12, all west of the Second meridian.

Township development plans only published.

5. Northeast of Prince Albert,

Province of Saskatchewan.

Tps. 53 and 54, range 12; tps. 52 to 54, range 13; tps. 51 to 54, range 14; tps. 50 to 54, ranges 15 to 17; tps. 51 to 53, ranges 18 to 21; tps. 50 to 55, range 22; and tps. 50 to 56, ranges 23 to 27, all west of the Second meridian.

Township development plans, land classification map, and soil map published.

6. Turtleford,

Province of Saskatchewan.

Tps. 49 to 53, ranges 18 to 23; and tps. 49 to 51, range 24, all west of the Third meridian.

Township development plans, land classification map, and soil map published.

7. North and East of Onion Lake,

Province of Saskatchewan.

Tps. 55 to 60, ranges 20 to 24; tps. 54 to 60, ranges 25 and 26, and tps. 55 to 60, range 27, all west of the Third meridian.

Township development plans, land classification map and soil map published.

8. St. Paul des Metis,

Province of Alberta.

Tps. 61 and 62, ranges 1 and 2; tps. 60 to 63, ranges 3 and 4; tps. 59 to 62, ranges 5 and 6; tps. 56 to 62, range 7; tps. 55 to 62, ranges 8 to 10; tps. 56 to 62, range 11; tps. 55, 56, and 58 to 62, range 12; tps. 57 to 60, ranges 13 and 14; tps. 58 to 60, ranges 15 and 16, and tps. 60 and 61, range 17, all west of the Fourth meridian.

Township development plans and land classification map published.

9. Vermilion,

Province of Alberta.

Tps. 49 to 56, ranges 1 to 14, west of the Fourth meridian.

Township development plans, land classification map, and soil map published for area included in tps. 49 to 53, ranges 7 to 14, west of the Fourth meridian. Plans and maps for remainder of area in course of preparation.

10. Lac la Biche.

Province of Alberta.

Tps. 63 to 68, ranges 11 to 13; tps. 65 to 68, ranges 14 and 15; tps. 65 to 68, and 71 and 72, range 16; and tps. 65 to 68, and 70 to 72, range 17, all west of the Fourth meridian.

Township development plans, land classification map, and soil map published. Soil map now out of print, and new edition in course of preparation.

11. Athabaska,

Province of Alberta.

Tps. 64 to 69, range 18; tps. 64 to 68, range 19; tps. 64 to 66, ranges 20 and 21; tps. 64 to 67, range 22; tps. 64 to 68, range 23; and tps. 64 to 69, ranges 24 and 25, all west of the Fourth meridian.

Township development plans, land classification map, and soil map published.

12. Sylvan Lake,

Province of Alberta.

Tps. 37 to 40, ranges 1 to 5; and tps. 38 to 40, range 6, all west of the Fifth meridian.

Township development plans, land classification map, and soil map published.

13. Whitecourt,

Province of Alberta.

Tps. 56 to 59, ranges 5 to 12; tps. 56 to 58, range 13; and tps. 56 and 57, ranges 13 and 14, all west of the Fifth meridian.

Township development plans and land classification map published.

14. Peace River,

Province of Alberta.

Tps. 71 to 76, ranges 15 and 16; tps. 71 to 80, range 17; tps. 71 to 81, range 18; tps. 70 to 82, range 19; tps. 70 to 87, ranges 20 and 21; tps. 70 to 82, and 84 to 87, range 22; tps. 70 to 81, and 84 to 87, range 23; tps. 70 to 78, and 84 to 87, range 24; tps. 70 to 75, 81 to 84, and 86 to 87, ranges 25 and 26, all west of the Fifth meridian. Tps. 70 to 73, 75, and 78 to 84, range 1; tps. 70 to 85, range 2; tps. 70 to 84, range 3; tps. 70 to 72, 74, and 76 to 87, range 4; tps. 69 to 74, and 76 to 87, range 5; tps. 69 to 71, 73, 74, and 76 to 87, range 6; tps. 70 to 80, and 83, 84, 86 and 87, range 7; tps. 70 to 80, 86 and 87, range 8; tps. 70 to 75, 86 and 87, range 9; tps. 69 to 75, and 87, range 10; and tps. 69 to 75, ranges 11 and 12, all west of the Sixth meridian.

Township development plans and land classification map published.

15. Peace River Block,

Province of British Columbia.

Tps. 77 to 82, ranges 13 and 14; tps. 77 to 81, and 84, range 15; tps. 77 to 80, 82, and 84, ranges 16 and 17; tps. 77 to 80, and 83 to 88, range 18; tps. 83 to 88, range 19; tps. 84 to 88, range 20; tps. 84, ranges 21 and 22; and tp. 83, range 23, all west of the Sixth meridian.

Township development plans and land classification map published. Soil map for part of district published, this being in two parts—the Pouce-Coupé district and the Fort St. John district.

PLANS, MAPS AND REPORTS—WHERE AND HOW AVAILABLE

The various maps and reports of a district are placed in the local land office for that particular district. These maps and reports are available to the public for inspection. Copies can be obtained from the Topographical Survey, Department of the Interior, Ottawa, at the following prices:

	Price
Land classification map.....	15c.
Soil map.....	15c.
Township development plans, scale 60 chains to an inch, of the district East of Vegreville, Alberta, and the district North and East of Preece- ville, Saskatchewan, with township report on reverse side.....	50c.
All other township development plans, scale 40 chains to an inch..	Price on Application

